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PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
APRIL 1963

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 224
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 April 1963

SOLAR-GEOPHYSICAL DATA

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The text describing the contents of Part B was republished in November 1962. A revision was made December 1962, and an addenda January 1963.

Feb. 1963	American Relative Sunspot Numbers R_A'
1	24
2	25
3	30
4	46
5	42
6	43
7	35
8	32
9	27
10	21
11	15
12	11
13	10
14	11
15	11
16	18
17	20
18	13
19	14
20	16
21	14
22	16
23	15
24	13
25	5
26	5
27	3
28	1
Mean:	19.1

March 1963	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	0	74
2	0	75
3	8	78
4	14	80
5	22	82
6	32	85
7	35	84
8	26	83
9	32	82
10	34	80
11	23	78
12	18	77
13	16	74
14	24	80
15	15	80
16	8	79
17	13	79
18	19	80
19	12	77
20	19	77
21	13	76
22	18	76
23	18	75
24	19	75
25	10	75
26	16	73
27	15	74
28	7	73
29	12	75
30	15	74
31	17	73
Mean:	16.9	77.5

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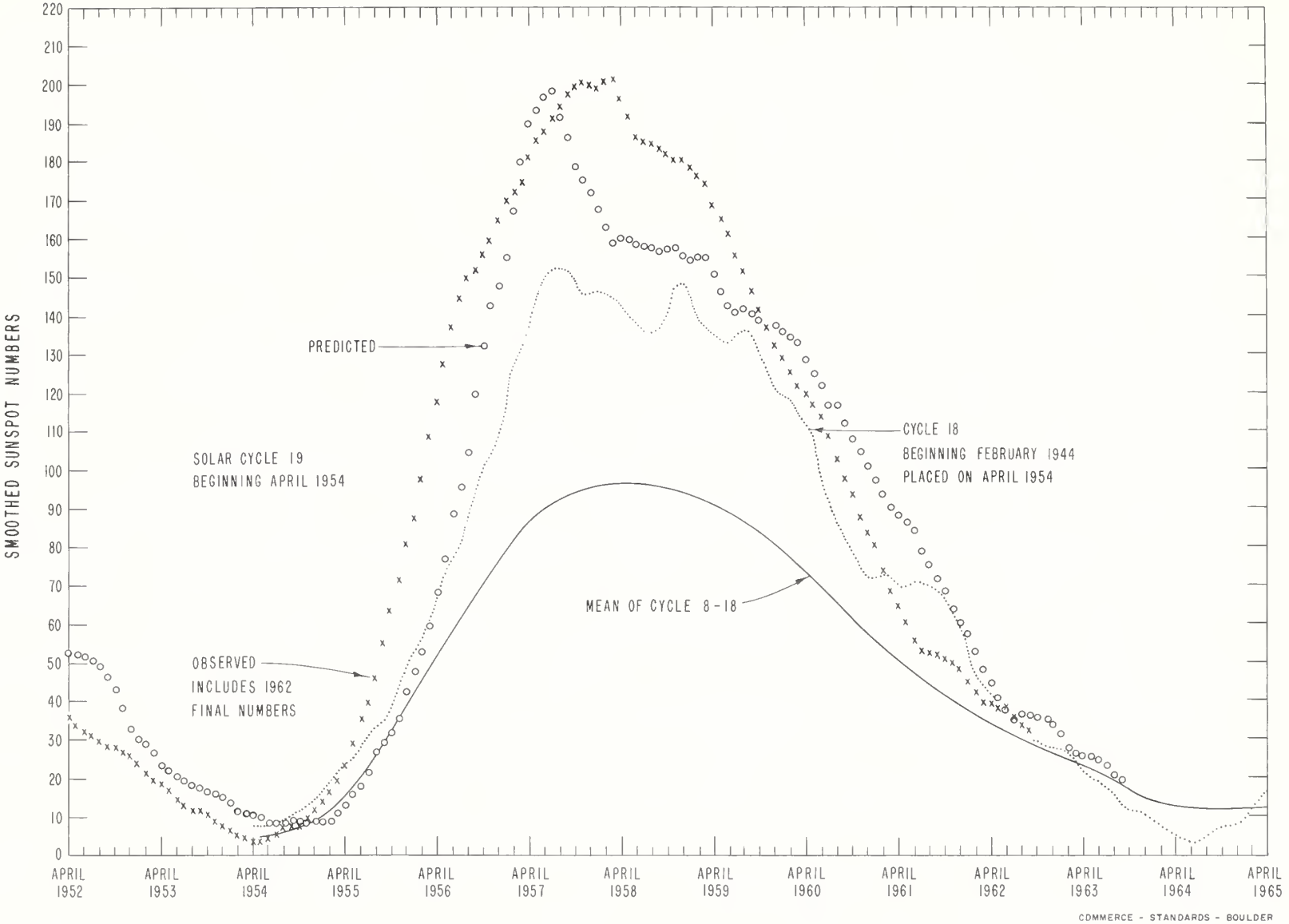

PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

MARCH 1963

CMP March 1963	Lat	McMath Plage Number	Return of Region	Calcium Plage Data			Sunspot Data		
				CMP Values Area	Int.	History, Age, *	CMP Values Area	Count	History
02.2	S23	6718	*	200	1.5	b ∧d 1,~3d			
02.8	N08	6719	New	700	2	b ∧d 1			
03.4	S10	6712	New	400	2	ℓ ⌝d 1			
04.2	N15	6720	*	(100)	(1.5)	b ∧d 1,~3d			
04.4	N04	6714	**	800	2.5	ℓ ⌝d 1			
05.0	N13	6728	*	(100)	(1)	b ∧d 1, 1d			
05.2	S18	6715	6689	(1000)	(2.5)	ℓ — ℓ 2			
06.2	S20	6722	6689	(600)	(2)	ℓ — ℓ 2			
07.8	N14	6723	6691	300	1.5	ℓ ⌝d 2			
09.0	S01	6726	*	100	2	b ∧d 1, 2d			
10.7	N08	6724	***	5300	3.5	ℓ — ℓ 4	340	5	ℓ \ d
11.0	S13	6725	+	200	1	b ∧d 1			
13.7	S10	6731	New	200	2.5	b ∧d 1			
14.7	N11	6727	New	900	3	ℓ — ℓ 1			
16.3	S03	6733	*	(100)	(1)	b ∧d 1, 1d			
16.5	S12	6737	New	(500)	(3)	b ⌜ ℓ 1			
16.6	N24	6732	*	200	1	b ∧d 1, 2d			
18.4	S14	6734	New	100	1	b / ℓ 1			
18.7	S09	6729	New	500	1.5	b ∧d 1			
19.9	S04	6735	*	200	1.5	b ∧d 1, 1d			
20.0	S11	6738	*	300	1.5	b ∧d 1,~2d			
21.8	N12	6730	6703	3800	3.5	ℓ — ℓ 3	220	1	ℓ — ℓ
21.8	S13	6736	*	300	2	b ∧d 1,~1d			
24.3	S34	6740	*	200	2	b ∧d 1, 1d			
24.3	S12	6745	New	(300)	(3)	b ⌜ ℓ 1			
25.3	N19	6751	*	(200)	(2)	b ∧d 1, 1d			
25.6	S54	6746	*	100	1.5	b ∧d 1, 1d			
26.4	S38	6747	*	200	1.5	b ∧d 1, 2d			
26.8	S14	6748	*	200	1.5	b ∧d 1,~1d			
27.0	N04	6755	New	(400)	(2.5)	b ∧d 1			
27.1	N11	6739	6713	(500)	(1.5)	ℓ ⌝d 2			
27.1	N23	6742	*	100	2	b ∧d 1,~1d			
27.9	N09	6743	*	(300)	(1.5)	b ∧d 1,~1d			
27.9	S20	6750	*	300	1.5	b ∧d 1,~2d			
28.0	S41	6752	*	400	2	b ∧d 1, 2d			
28.1	N11	6749	New	300	2.5	b ∧d 1			
28.7	N19	6741	*	(200)	(1.5)	b ⌝d 1, 1d			
28.7	S01	6757	New	(200)	(2)	b ∧d 1			
29.1	N11	6760	*	(200)	(1)	b ∧d 1, 1d			
31.2	N19	6744	New	(400)	(1.5)	ℓ ⌝d 1			

* New-but small and ephemeral: in Age column their lifetime in days is indicated
** New-in position of ephemeral 6690
*** 6692 and 6693
\+ New-in position of 6696a

COMMERCE - STANDARDS - BOULDER

MT. WILSON MAGNETIC CLASSIFICATIONS OF SUNSPOTS

MARCH 1963

March 1963	Time Meas. U.T.	Lat.	Mer. Dist.	Type	March 1963	Time Meas. U.T.	Lat.	Mer. Dist.	Type
1	No spots				14	No spots			
2	No spots				15	1735	N 13	E 79	αp
3	No obs.				16	No obs.			
4	1720	N 12	E 65	βp	17	No obs.			
5	No obs.				18	1905	N 12	E 38	αp
6	1710	N 12	E 38	αp	19	1805	N 12	E 25	αp
		N 13	E 52	αf					
		N 08	E 60	αf	20	1825	N 12	E 11	αp
7	1700	N 12	E 26	βp	21	1725	N 11	W 02	αp
8	2340	N 12	E 09	βp	22	No obs.			
9	No obs.				23	No obs.			
10	1730	N 12	W 16	βγ	24	1820	N 12	W 42	αp
		N 12	W 05	β					
		N 15	E 47	αp	25	1645	N 12	W 56	αp
11	1645	N 12	W 29	αp	26	1700	N 12	W 67	αp
		N 15	E 33	αp					
					27	No obs.			
12	1650	N 12	W 42	αp					
		N 15	E 18	αp	28	No obs.			
13	1830	N 12	W 56	αp	29	No obs.			
		S 13	E 01	βp					
		N 15	E 04	βp	30	1745	S 07	E 22	βp
					31	No obs.			

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PROVISIONAL CORONAL LINE EMISSION INDICES

MARCH 1963

CMP Mar 1963	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	7	11	x	x	5	8	x	x	x	x	41	52	x	x	35	50
2	2	3	7	10	3	4	5	7	13	17	17	28	8	11	13	16
3	2	6	11	20	4	8	12	20	x	x	x	x	x	x	x	x
4	3	10	8	9	9	14	6	9	6	8	6	10	5	6	6	6
5	2	4	8	9	7	11	5	6	x	x	x	x	x	x	x	x
6	3	5	4	10	5	8	5	7	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	11	20	11	15	26	45	15	20
8	8	12	2	3	3	4	3	5	x	x	x	x	x	x	x	x
9	27	38	5	10	15	20	4	5	x	x	x	x	x	x	x	x
10	x	x	x	x	x	x	x	x	10	30	6	14	34	62	14	46
11	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
12	30	42	x	x	3	6	x	x	5	8	16	20	25	36	9	10
13	x	x	x	x	x	x	x	x	5	8	10	14	18	31	5	8
14	17	25	6	12	5	8	5	7	3	6	22	26	17	39	12	14
15	14	17	24	36	x	x	22	28	6	17	24	30	8	11	13	18
16	11	14	12	16	5	6	12	13	8	36	36a	68a	7	11	22a	23a
17	x	x	x	x	x	x	x	x	6	9	22	32	8	9	6	10
18	4	5	5	8	4	4	6	7	8	28	40	65	15	20	13	16
19	x	x	x	x	x	x	x	x	3	6	26	32	29	34	18	40
20	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
21	48	76	40	90	5	6	15	18	x	x	x	x	x	x	x	x
22	x	x	x	x	x	x	x	x	10	25	22	28	41	73	29	52
23	x	x	x	x	x	x	x	x	5	6	16	20	24	45	18	24
24	14	20	14	22	3	5	9	12	x	x	x	x	x	x	x	x
25	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
26	7	8	8	10	5	8	9	10	x	x	x	x	x	x	x	x
27	8	11	7	11	6	11	6	8	6	8	15	16	3	6	20	28
28	6	8	18	24	7	8	15	28	x	x	x	x	x	x	x	x
29	6	8	22	28	5	6	12	28	x	x	x	x	x	x	x	x
30	5	8	24a	38a	8	11	19a	26a	x	x	x	x	x	x	x	x
31	5	10	20	24	11	18	12	16	x	x	x	x	x	x	x	x

x = no observations * = yellow line emission a = index computed from low weight data

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SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq Deg.	MAX. WIDTH Ha	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
	01	0125	0715	NO FLARE	PATROL											
	01	0850	0905	NO FLARE	PATROL											
	01	0915	0920	NO FLARE	PATROL											
	01	1005	1010	NO FLARE	PATROL											
	01	1015	1025	NO FLARE	PATROL											
WENDEL	01	1204 E	1218 D		N09	E18	6719	14 D	1				3.00			
LOCKHEED	01	1722	1730	1725	S09	E22			1-	2	1725	.20	.20		20	
	02	0125	0645	NO FLARE	PATROL											
	03	0200	0715	NO FLARE	PATROL											
LOCKHEED	03	1840	1903	1845	N15	E80			1-	2	1845	.20	.60		20	
LOCKHEED	03	2007	2033	2015	N15	E80			1-	2	2015	.50	1.50		20	
	04	0205	0715	NO FLARE	PATROL											
ARCETRI	04	1000 E			N13	E78			1-	2	1000					
	04	1610	1615	NO FLARE	PATROL											
	04	1700	1710	NO FLARE	PATROL											
LOCKHEED	04	1900	1907	1902	N15	E80			1-	2	1902	.30	.90		20	
LOCKHEED	04	2103	2125	2106	N13	E65			1-	1	2106	1.00	1.70		20	
	05	0110	0130	NO FLARE	PATROL											
	05	0145	0710	NO FLARE	PATROL											
ARCETRI	05	0855 E	0940 D		N14	E64	6724	45 D	1	2	0915					
	06	0100	0650	NO FLARE	PATROL											
WENDEL	06	0820 E	0839 D		N08	E67			1-							
ARCETRI	06	0915 E	1000 D		N14	E49	6724	45 D	1	3	0940					
	06	1620	1635	NO FLARE	PATROL											
SAC PEAK	06	2241	2300	2247	N12	E40			1-	2		.17	.19		17	
	07	0100	0705	NO FLARE	PATROL											
	07	0715	0820	NO FLARE	PATROL											
	07	0900	0920	NO FLARE	PATROL											
HONOLULU	07	1928 E	1946 D	1932	N13	E23			1-	1	1932	1.24	1.28			
SAC PEAK	07	1928	1946	1930	N15	E24			1-	3		.54	.56		19	
MCMATH	07	1929	1945	1933	N15	E25	6724		1-	2	1933	.30	.40			
LOCKHEED	07	1933 E	1945	1937	N15	E23			1-	1	1937	.30	.30		20	
SAC PEAK	07	2127	2140	2133	N14	E23			1-	3		.39	.42		16	
SAC PEAK	07	2159	2210	2202	N14	E23			1-	3		.80	.83		18	
HONOLULU	07	2200 E	2210 D	2202	N13	E23			1-	1	2202	1.65	1.69			
LOCKHEED	07	2200	2216	2203	N15	E22			1-	2	2203	.40	.40		20	
	07	2345	2400	NO FLARE	PATROL											
	08	0000	0735	NO FLARE	PATROL											
SALTSJOBADN	08	1120 E	1131 D		N13	E14			1-	1	1123	.50	.50			
WENDEL	08	1124 E	1141 D		N13	E13			1-							
OTTAWA	08	1222	1234	1224	N16	E14			1-	2	1224	1.20	1.20			
SALTSJOBADN	08	1228 E	1233 D		N13	E14			1-	1	1230	.50	.50			
WENDEL	08	1228 E	1246 D		N13	E12			1-							
SAC PEAK	08	1525	1539	1528	N14	E12			1-	3		.56	.56		15	

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS AREA Sq Deg	CORR. AREA Sq Deg.	MAX. WIDTH Ha	MAX INT *)	PROVISIONAL IONOSPHERIC EFFECT
	09	0000	1125	NO FLARE	PATROL											
	09	1135	1220	NO FLARE	PATROL											
	10	0205	1435	NO FLARE	PATROL											
	11	0145	0650	NO FLARE	PATROL											
ONDREJOV	11	1054 E	1232		N14	W12	6724	98 D	1	3	1103			2.30		
	12	0205	1430	NO FLARE	PATROL											
	12	1505	1510	NO FLARE	PATROL											
	12	1525	1655	NO FLARE	PATROL											
SAC PEAK	12	1750	1812	1758	N11	W41			1-	3		.68	.80		16	
	13	0155	1240	NO FLARE	PATROL											
	13	1250	1255	NO FLARE	PATROL											
	13	1315	1425	NO FLARE	PATROL											
	13	1450	1505	NO FLARE	PATROL											
	13	1605	1615	NO FLARE	PATROL											
	14	0115	0650	NO FLARE	PATROL											
MCMATH	14	1257	1313	1300	N13	W54	6724		1-	2	1300	.50	1.00			
OTTAWA	14	1258	1314		N12	W54			1-	3	1300	1.10	1.50			
	14	2215	2220	NO FLARE	PATROL											
	15	0120	0715	NO FLARE	PATROL											
	15	0745	0845	NO FLARE	PATROL											
	15	0920	0925	NO FLARE	PATROL											
	15	1015	1045	NO FLARE	PATROL											
OTTAWA	15	1422	1435	1425	N13	E90			1-	2	1425	.35	1.05			
MCMATH	15	1426	1431	1426	N13	E89	6730		1-	2	1426	.10	.80			
MCMATH	15	1654	1700 D	1657	N14	E89	6730		1-	1	1657	.30				
	16	0005	0025	NO FLARE	PATROL											
	16	0115	0655	NO FLARE	PATROL											
	17	0000	0825	NO FLARE	PATROL											
	17	0935	1000	NO FLARE	PATROL											
	17	1100	1135	NO FLARE	PATROL											
SAC PEAK	17	2223	2234	2228	N16	W48			1-	3		.27	.35		16	
	18	0000	1430	NO FLARE	PATROL											
LOCKHEED	18	1847	1915	1854	N13	E44			1-	2	1854	.30	.40		20	
HUANCAYO	18	1848	1856 D		N13	E38	6730	8 D	1	2	1856	1.20	2.30	2.00		
MCMATH	18	1848	1906	1849	N12	E43	6730		1-	2	1849	.70	1.10			
SAC PEAK	18	1851 E	1904	1852	N12	E43			1-	2		.95	1.16		16	
	19	0110	0840	NO FLARE	PATROL											
	20	0125	0820	NO FLARE	PATROL											
	20	0830	1005	NO FLARE	PATROL											
	20	1010	1015	NO FLARE	PATROL											

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX INT. °₀	PROVISIONAL IONOSPHERIC EFFECT
	20	1025	1050	NO FLARE	PATROL											
	20	1115	1120	NO FLARE	PATROL											
	20	1125	1150	NO FLARE	PATROL											
	20	1215	1320	NO FLARE	PATROL											
WENDEL	20	1318 E	1331 D		N12	E12			1-							
SAC PEAK	20	1505	1513	1508	N11	E18			1-	3		.41	.43		16	
WENDEL	20	1507 E	1525 D		N12	E18	6730	18 D	1				3.00			
LOCKHEED	20	1957	2006	2001	S13	E13			1-	2	2001	.10	.10		20	
SAC PEAK	20	2150	2154	2152	N12	E08			1-	3		.27	.25		16	
LOCKHEED	20	2150	2200	2153	N13	E08			1-	2	2153	.30	.30		20	
	21	0110	0120	NO FLARE	PATROL											
	21	0155	0630	NO FLARE	PATROL											
	22	0100	1145	NO FLARE	PATROL											
	22	2145	2230	NO FLARE	PATROL											
	22	2240	2255	NO FLARE	PATROL											
	23	0000	0625	NO FLARE	PATROL											
	23	0630	0650	NO FLARE	PATROL											
	23	1130	1145	NO FLARE	PATROL											
	24	0000	0620	NO FLARE	PATROL											
WENDEL	24	0738 E	0756 D		N17	W28	6730	18 D	1				3.00			
	25	0100	0545	NO FLARE	PATROL											
	25	2330	2340	NO FLARE	PATROL											
	26	0000	0045	NO FLARE	PATROL											
	26	0145	0750	NO FLARE	PATROL											
	26	1005	1050	NO FLARE	PATROL											
	26	1120	1130	NO FLARE	PATROL											
	26	1320	1330	NO FLARE	PATROL											
	26	1445	1510	NO FLARE	PATROL											
	26	2330	2345	NO FLARE	PATROL											
	26	2355	2400	NO FLARE	PATROL											
	27	0000	0620	NO FLARE	PATROL											
	27	0645	0700	NO FLARE	PATROL											
	27	0730	0740	NO FLARE	PATROL											
	27	0750	0835	NO FLARE	PATROL											
CAPRI S	27	0834 E	0906 D		N10	W78	6730	32 D	2+	1	0850	2.00	5.80			
	27	0910	0935	NO FLARE	PATROL											
	27	1045	1130	NO FLARE	PATROL											
	28	0010	0100	NO FLARE	PATROL											
	28	0110	0130	NO FLARE	PATROL											
	28	0205	0700	NO FLARE	PATROL											
	28	0830	0835	NO FLARE	PATROL											
	28	0930	1005	NO FLARE	PATROL											
	28	1015	1025	NO FLARE	PATROL											

SOLAR FLARES

MARCH 1963

OBSERVATORY	DATE MAR 1963	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq Deg	MAX. WIDTH Hα	MAX INT %	PROVISIONAL IONOSPHERIC EFFECT
	28	1040	1045	NO FLARE	PATROL											
	28	1050	1130	NO FLARE	PATROL											
	28	2355	2400	NO FLARE	PATROL											
	29	0000	0710	NO FLARE	PATROL											
WENDEL	29	0631 E	0731		S07	E43	6754	60 D	1+				5.00			
	29	0715	0735	NO FLARE	PATROL											
CAPRI S	29	0811 E	1045 D		S10	E40	6754	154 D	1	3	1005	2.00	2.80			
ARCETRI	29	0815 E	0905 D		S04	E43	6754	50 D	1	2	0857					
WENDEL	29	0839	0948		S07	E42	6754	69	1+				6.00			
SALTSJOBADN	29	0910 E	1140 D		S07	E39			1-	3	0915	1.00	1.30			
ARCETRI	29	0936 E			S04	E43	6754		1	2	0936					
WENDEL	29	1048 E	1104		S07	E41	6754	16 D	1				4.00			
SALTSJOBADN	29	1200 E	1233 D		S07	E39			1-	3	1205	1.00	1.30			
CAPRI S	29	1200 E	1332 D		S10	E42	6754	92 D	1	3	1220	3.00	4.30			
WENDEL	29	1204 E	1215 D		S08	E42			1-							
WENDEL	29	1217 E	1238 D		S08	E41			1-							
SAC PEAK	29	1406 E	1457	1424 U	S07	E38			1-	2		1.11	1.22		17	
	29	2045	2055	NO FLARE	PATROL											
	30	0120	0125	NO FLARE	PATROL											
	30	0145	0545	NO FLARE	PATROL											
	30	0555	1225	NO FLARE	PATROL											
	30	1230	1310	NO FLARE	PATROL											
MCMATH	30	1408	1425	1413	S07	E26	6754		1-	2	1413	.70	.80			
MCMATH	30	1830	1855	1840	S08	E80	6758		1-	2	1840		1.00			
	31	0125	0840	NO FLARE	PATROL											
	31	0900	0920	NO FLARE	PATROL											
	31	0930	1125	NO FLARE	PATROL											
	31	2300	2400	NO FLARE	PATROL											

COMMERCE - STANDARDS - BOULDER

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN		
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	NIZMIR	KRASNAYA PAKHRA, USSR
		KIEV KY	KIEV UNIVERSITY, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	LOCKHEED	LOS ANGELES, CALIF., USA	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR			TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE		NEW SCHAUIN FREIBURG, GFR		

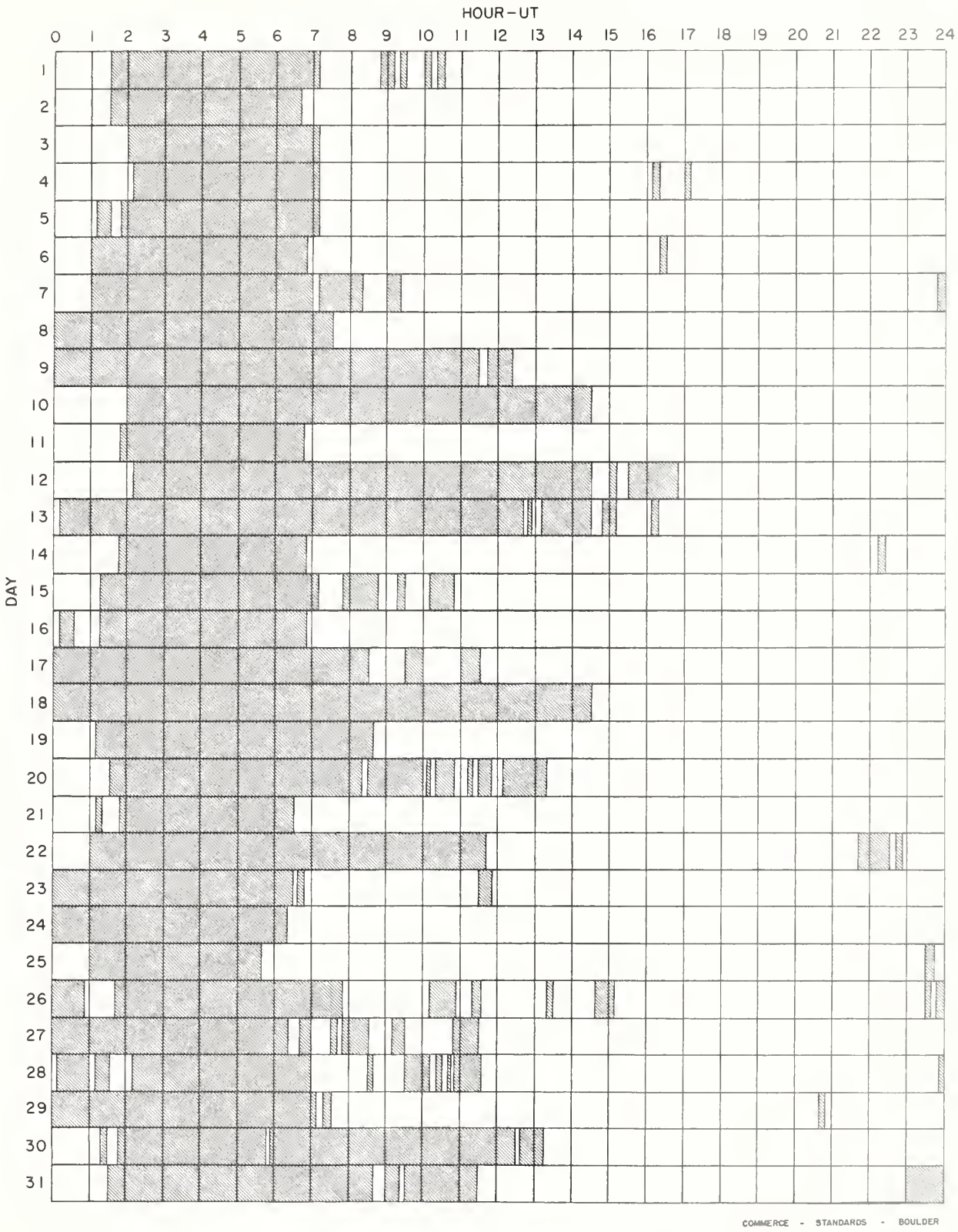
ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MARCH 1963



Stations Include:

Arcetri
Capri-S (Swedish)
Honolulu
Huancayo
Lockheed
McMath-Hulbert
Ondrejov
Ottawa
Sacramento Peak

SOLAR FLARES

DECEMBER 1962

OBSERVATORY	DATE DEC 1962	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg.	CORR AREA Sq. Deg	MAX WIDTH Ha	MAX INT. %	PROVISIONAL IONOSPHERIC EFFECT
VOROSHILOV	01	0227	0236	0230	N19	W90			1-	2		.99			114	
MITAKA	01	0230 E	0240	0230	N24	W90	6630	10 D	1	1	0230	1.47		5.22	159	
	02	0010	0500	NO FLARE	PATROL											
HAUTE-PROV	03	0855	0902		N04	W27			1-							
	04	0205	0345	NO FLARE	PATROL											
	04	0350	0400	NO FLARE	PATROL											
	04	0515	0610	NO FLARE	PATROL											
	04	0640	0700	NO FLARE	PATROL											
HAUTE-PROV	04	0800 E	0900		S17	E60	6639	60 D	1?							
	05	0135	0500	NO FLARE	PATROL											
	05	2255	2300	NO FLARE	PATROL											
	05	2310	2325	NO FLARE	PATROL											
CAPETOWN	06	1432	1438	1434	N23	W77			1-		1434	.80				
CAPRI-F	06	1433 E	1441		N02	W73			1-	2	1434	.50	1.37			
CAPRI-F	07	1252 E	1306		S12	E26			1-	2	1252	.75	.82			
	07	2245	2400	NO FLARE	PATROL											
	09	0655	0705	NO FLARE	PATROL											
HAUTE-PROV	10	0753	0930 D	0815	S15	W05	6639	97 D	1+			3.30	3.40			
ATHENES	10	0800	1006		S14	W07	6639	126	1+	2		4.30	4.40			
ABASTUMANI	10	0802	1003	0826	S14	W05	6639	121	2	2		7.20	7.60		78	
BUCHAREST	10	0837 E	1045 D	0837	S11	W09	6639	128 D	2	2			6.95			
KIEVKO	10	0852 E	0910		S15	W09	6639	18 D	1+	1	0852	4.13			62	
UCCLE	10	0929 E	1005	0934	S15	E06	6639	36 D	1	4	0934					
	10	1110	1115	NO FLARE	PATROL											
	10	1420	1455	NO FLARE	PATROL											
	10	1500	1505	NO FLARE	PATROL											
	10	2250	2340	NO FLARE	PATROL											
	11	0300	0305	NO FLARE	PATROL											
	11	0610	0615	NO FLARE	PATROL											
	11	0625	0645	NO FLARE	PATROL											
	11	0650	0700	NO FLARE	PATROL											
	11	0715	0755	NO FLARE	PATROL											
UCCLE	13	0903	0911		S13	E55			1-	3						
CAPETOWN	13	0904	0915	0907	N03	W52			1-		0907	.80	1.30			
HAUTE-PROV	13	1307 E	1340		S15	W45			1-							
HAUTE-PROV	13	1330	1400		S05	E40			1-							
HAUTE-PROV	13	1357	1408		S14	W50			1-							
MITAKA	14	0052	0101	0056	S13	E14	6643	9	1	1	0054	1.47	1.54	1.54	96	
KODAIKNL	14	0242 E	0255 D	0245	S11	E12			1-	3	0245			1.20	114	
HAUTE-PROV	14	1145	1155		S12	E09			1-							

SOLAR FLARES

DECEMBER 1962

OBSERVATORY	DATE DEC 1962	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX INT. °.	PROVISIONAL IONOSPHERIC EFFECT
	14	1430	1450	NO FLARE	PATROL											
	15	1355	1425	NO FLARE	PATROL											
	15	1505	1515	NO FLARE	PATROL											
CAPETOWN	16	0825	0850	0832	S05	W20			1-		0832	1.40	1.50			
KODAIKNL	16	0829 E	0850 D	0829	S13	W20			1-	3	0829			1.52		
ATHENES	16	0834 E	0918		S07	W21			1-	3		1.80	1.90			
	16	1345	1400	NO FLARE	PATROL											
	16	2215	2340	NO FLARE	PATROL											
	16	2350	2400	NO FLARE	PATROL											
	17	0000	0120	NO FLARE	PATROL											
	17	0300	0305	NO FLARE	PATROL											
	17	0330	0340	NO FLARE	PATROL											
	17	0630	0640	NO FLARE	PATROL											
	17	0805	0815	NO FLARE	PATROL											
HUANCAYO	17	1630 E	1636	1632	S14	W46			1-	2	1632	.40	.60	7.10		
CLIMAX	17	1630	1640	1633	S13	W46			1-			.30	.40			
	17	2240	2400	NO FLARE	PATROL											
VOROSHILOV	18	0026	0029	0026	S15	W54			1-	1		.90			68	
	18	0300	0435	NO FLARE	PATROL											
	18	0515	0810	NO FLARE	PATROL											
BUCHAREST	18	0812 E	0836 D	0836	N09	E06	6649	24 D	1				2.28			
BUCHAREST	18	0817 E	0832 D	0832	N10	E07			1-	3			.57			
HAUTE-PROV	18	0845	0855		N08	E05	6649	10	1							
HAUTE-PROV	18	0951	1000		N10	E07			1-							
HAUTE-PROV	18	1025	1050 D		N10	E02			1-							
HAUTE-PROV	18	1412	1424 D		N09	E04			1-							
HAUTE-PROV	18	1507	1520		N09	E02	6649	13	1?							
	18	1735	1740	NO FLARE	PATROL											
	18	1745	1750	NO FLARE	PATROL											
HONOLULU	18	1822	2002	1916	S03	E10			1-	2	1916	1.34	1.34			
	18	2100	2150	NO FLARE	PATROL											
	19	0035	0040	NO FLARE	PATROL											
	19	0050	0055	NO FLARE	PATROL											
	19	0105	0110	NO FLARE	PATROL											
	19	0300	0505	NO FLARE	PATROL											
	19	0520	0525	NO FLARE	PATROL											
	19	0535	0545	NO FLARE	PATROL											
	19	1215	1240	NO FLARE	PATROL											
	19	1320	1450	NO FLARE	PATROL											
	19	1505	1540	NO FLARE	PATROL											
	19	1640	1710	NO FLARE	PATROL											
	19	1720	1725	NO FLARE	PATROL											
VOROSHILOV	20	0045	0047	0046	N08	E07			1-	1		.54			64	
KODAIKNL	20	0612 E	0622 D	0612	N06	W21			1-	3	0612			1.36	114	
HAUTE-PROV	20	0815	0830		N10	W15	6649	15	1							

SOLAR FLARES

DECEMBER 1962

OBSERVATORY	DATE DEC 1962	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH Ha	MAX INT "	PROVISIONAL IONOSPHERIC EFFECT
KODAIKNL	20	0820 E	0826 D	0820	N07	W15			1-	3	0820			1.68	114	
CAPETOWN	20	0820	0847	0822	N11	W19	6649	27	1		0822	2.60	2.80			
BAKOU	20	0903	0921 D	0912	N11	W15			1-	2	0912	2.39	2.58			
	20	1320	1405	NO FLARE	PATROL											
IKOMASAN	21	0026 E	0031 D		N10	W30	6649	5 D	1		0029	1.13		1.26	100	
KODAIKNL	21	0902 E	0915 D	0904	N10	W27	6649	13 D	1	2	0904			1.84	114	
NIZMIR	21	0910 E	0934	0912	N05	W34			1-			.93			60	
	21	1405	1410	NO FLARE	PATROL											
	22	0050	0150	NO FLARE	PATROL											
	22	0715	0720	NO FLARE	PATROL											
	22	1235	1305	NO FLARE	PATROL											
	22	1325	1400	NO FLARE	PATROL											
	22	1410	1525	NO FLARE	PATROL											
	23	0805	0830	NO FLARE	PATROL											
	23	1115	1125	NO FLARE	PATROL											
	23	1135	1245	NO FLARE	PATROL											
	23	1455	1515	NO FLARE	PATROL											
	23	1530	1545	NO FLARE	PATROL											
CLIMAX	23	1720	1734	1723	N09	W67			1-			.40	.70			
	23	2210	2400	NO FLARE	PATROL											
	24	0000	0005	NO FLARE	PATROL											
	24	0500	0725	NO FLARE	PATROL											
	24	0730	0825	NO FLARE	PATROL											
UCCLE	24	0953	1015 D	0957	N08	W86			1-	3	0957					
CAPETOWN	24	0955	1018	0957	N12	W79	6649	23	1		0957	.90				
NIZMIR	24	0956 E	1000 D	0958	N10	W80	6649	4 D	1		>0951	1.80			55	
UCCLE	24	1239	1251		N07	W57			1-	3						
	24	1745	1830	NO FLARE	PATROL											
	24	1940	2100	NO FLARE	PATROL											
	24	2110	2345	NO FLARE	PATROL											
	25	0130	0200	NO FLARE	PATROL											
	25	1535	1545	NO FLARE	PATROL											
	26	0000	0005	NO FLARE	PATROL											
	26	0020	0025	NO FLARE	PATROL											
KODAIKNL	26	0300 E	0310 D	0300	N06	E30			1-	2	0300			1.36	114	
	27	0300	0515	NO FLARE	PATROL											
	27	1140	1145	NO FLARE	PATROL											
	27	1155	1210	NO FLARE	PATROL											
	28	0330	0335	NO FLARE	PATROL											
	28	0420	0510	NO FLARE	PATROL											
	28	1550	1555	NO FLARE	PATROL											
	29	0110	0115	NO FLARE	PATROL											

SOLAR FLARES

DECEMBER 1962

OBSERVATORY	DATE DEC 1962	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
	29	1450	1455	NO FLARE	PATROL											
	30	0140	0145	NO FLARE	PATROL											
	30	0200	0235	NO FLARE	PATROL											
	30	2215	2230	NO FLARE	PATROL											
	31	0100	0225	NO FLARE	PATROL											
	31	0425	0435	NO FLARE	PATROL											
HONOLULU	31	1942	2006	1954	S30	E25			1-	2	1954	1.03	1.13			

COMMERCE - STANDARDS - BOULDER

These flare reports are addenda to the December 1962 flares published in CRPL-F 221B for January 1963.

ATHENES	ATHENS, GREECE	HONOLULU	HAWAII, USA	NERA	NEDERHORST den BERGH, NETHERLANDS
BAKOU	PIRCULI, USSR	IKOMASAN	KYOTO, JAPAN	NIZMIR	KRASNAYA PAKHRA, USSR
CAPETOWN	ROYAL OBSERVATORY, CAPE OF GOOD HOPE	KIEV KO	KIEV GAO, USSR	SAC PEAK	SACRAMENTO PEAK, N.MEX. USA
CAPRI F	CAPRI, ITALY (GERMAN)	KIEV KY	KIEV UNIVERSITY, USSR	SALTSJÖBADEN	STOCKHOLM, SWEDEN
CAPRI S	CAPRI, ITALY (SWEDISH)	LOCKHEED	LOS ANGELES, CALIF., USA	SCHAUINS	SCHAUINSLAND, GFR
CRIMÉE	SIMEIZ, USSR	MCMATH	MCMATH-HULBERT PONTIAC, MICH., USA	TACHKENT	TASHKENT, USSR
HERSTMONCEU	ROYAL GREENWICH OBSERVATORY, HERSTMONCEUX, ENGLAND	MOSCOU	MOSCOW-GAISH, USSR	WENDEL	WENDELSTEIN, GFR
HTE-PROVEN	HAUTE-PROVENCE	NEW SCHAUIN	FREIBURG, GFR		

ALL VALUES IN THE MAXIMUM INTENSITY COLUMN FOR SAC PEAK ARE ARBITRARY UNITS (0-40) AND FOR LOCKHEED ARE ARBITRARY UNITS (10-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

SEE DESCRIPTIVE TEXT PUBLISHED NOVEMBER 1961 FOR DEFINITION OF CORRECTED AREA VALUES LISTED FOR CLIMAX, HAWAII, LOCKHEED AND SACRAMENTO PEAK.

E = LESS THAN D = GREATER THAN U = APPROXIMATE □ = NOT REPORTED.

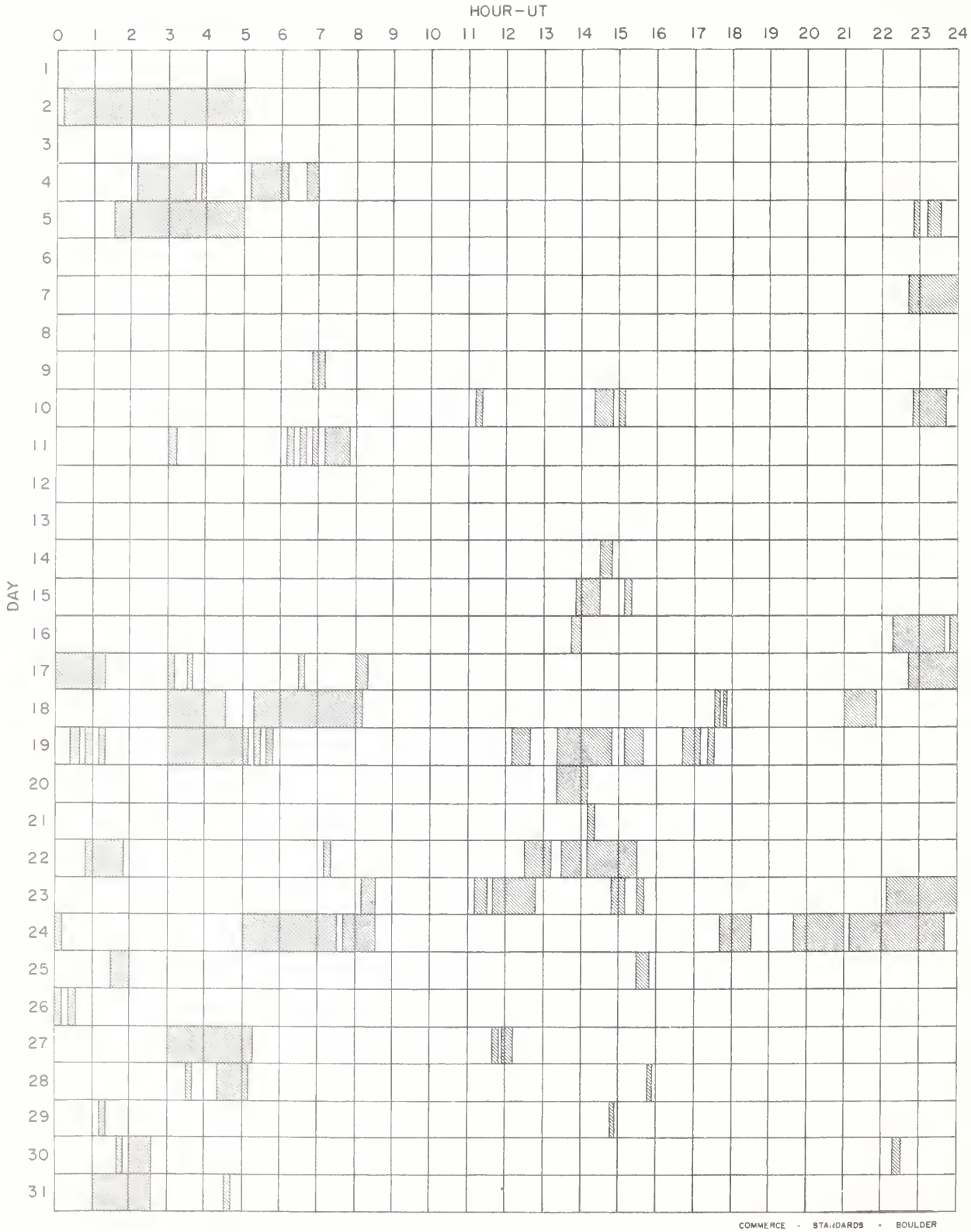
Addendum to the November 1962 flares published in CRPL-F 200B, December 1962 and also in the CRPL-F 223B, March 1963.

OBSERVATORY	DATE Nov. 1962	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX WIDTH Ha	MAX. INT %	PROVISIONAL IONOSPHERIC EFFECT
IKOMASAN	30	2353E	0030D		N08	W90	6630	37D	1		2353	1.03		1.26	100	

COMMERCE - STANDARDS - BOULDER

INTERVALS OF NO FLARE PATROL OBSERVATIONS

DECEMBER 1962



Stations Included:

Arcetri	Capri-F (German)	Herstmonceux	Kiev KO	Mitaka	Schauinsland
Athenes	Capri-S (Swedish)	Honolulu	Kodaikanal	Nizmir	Tashkent
Bakou	Climax	Huancayo	McMath-Hulbert	Ottawa	Uccle
Bucharest	Crimee	Ikomasan	Meudon	Sacramento Peak	Voroshilov
Capetown	Haute-Provence	Lockheed			

IONOSPHERIC EFFECTS OF SOLAR FLARES

SHORT WAVE RADIO FADEOUTS
SUDDEN COSMIC NOISE ABSORPTION
SUDDEN ENHANCEMENTS OF ATMOSPHERICS
SUDDEN PHASE ANOMALIES
SOLAR NOISE BURSTS AT 18 Mc

FEBRUARY 1963

FEBRUARY 1963	UNIVERSAL TIME			SWF TYPE IMP	IMPORTANCE					WIDE SPREAD INDEX	STATIONS	KNOWN FLARE
	START	END	MAX		ABS	SCNA	SEA	SPA	BUR			
01	1740	1804		SL 1							HU PR	1733
+ 01	1740	1834	1756				2				A5	
09	0058	0100							1		HA MA	

COMMERCE - STANDARDS - BOULDER

+ Sudden Enhancement of Signal on NPM observed by A14

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES

MARCH 1963

ARO - OTTAWA 2800 Mc.

MARCH 1963	TYPE	START UT	DURATION HRS MIN	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
4	1 Simple 1	2104	2	2105	4	2	
7	8 Group (2)	1928.8	4.8				
	1 Simple 1 f	1928.8	1.6	1929.1	4	2	
	1 Simple 1	1932.3	1.3	1932.8	1	0.6	
7	2 Simple 2	2201	1.3	2001.7	10	4	

COMMERCE - STANDARDS - BOULDER

In addition to last month's report.

FEBRUARY 1963	TYPE	START UT	DURATION HRS MIN	MAXIMUM TIME UT	MAXIMUM PEAK FLUX	MAXIMUM MEAN FLUX	REMARKS
21	3 Simple 3	2015	>1 45	Indet.	5	-	

COMMERCE - STANDARDS - BOULDER

HOURS OF OBSERVATION: JANUARY, FEBRUARY, MARCH 1963

OBSERVING PERIOD:
January 13:15 UT - 21:30 UT (approx)
February 12:45 UT - 22:00 UT (approx)
March 12:10 UT - 22:20 UT (approx)

With the following exceptions:

(1) Observations commenced:
January 11 at 15:20 UT
March 2 at 13:30 UT
March 6 at 13:15 UT
March 7 at 13:20 UT

(2) Observations ended:
January 5 at 20:15 UT
January 6 at 20:15 UT
January 7 at 20:10 UT
January 8 at 20:40 UT
January 9 at 20:45 UT
January 12 at 20:50 UT
January 13 at 20:55 UT

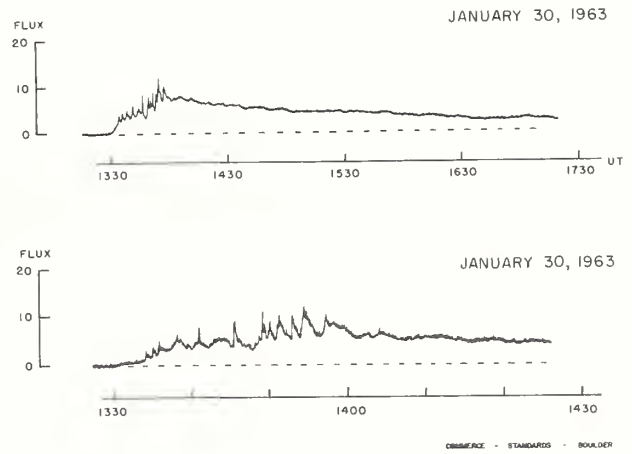
(3) Interruption of observations for calibration purposes of approximately 20 minutes, usually in the period 16:00 UT to 17:00 UT for the following days:

January - 8
9
12
13
14
16
February 2 to 11
March 6
7
13

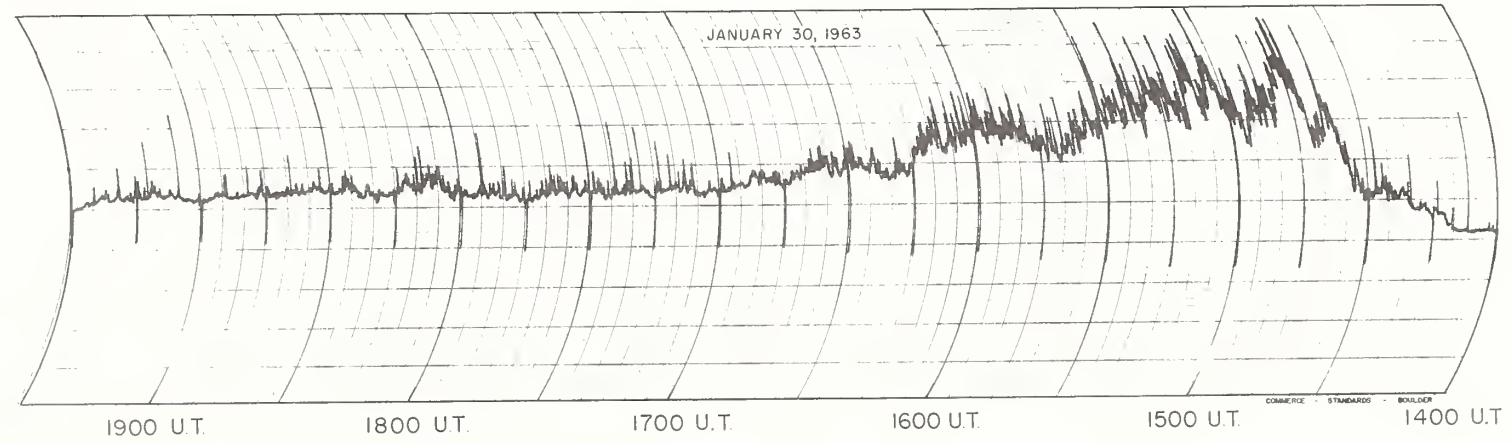
SOLAR NOISE BURSTS

JANUARY 30, 1963

ARO - OTTAWA 2800 Mc.



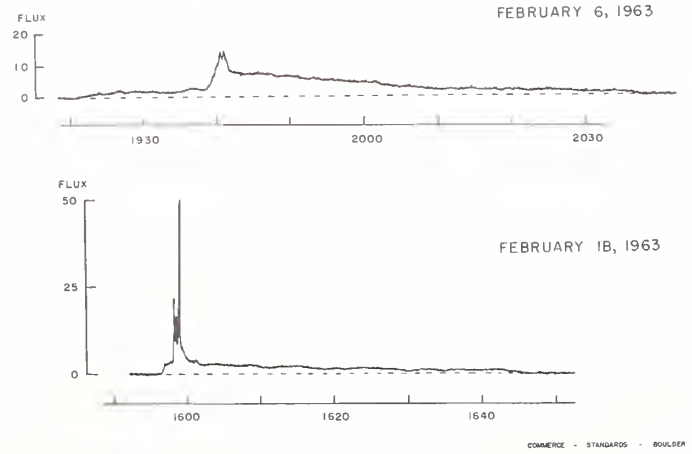
BOULDER 108 Mc.



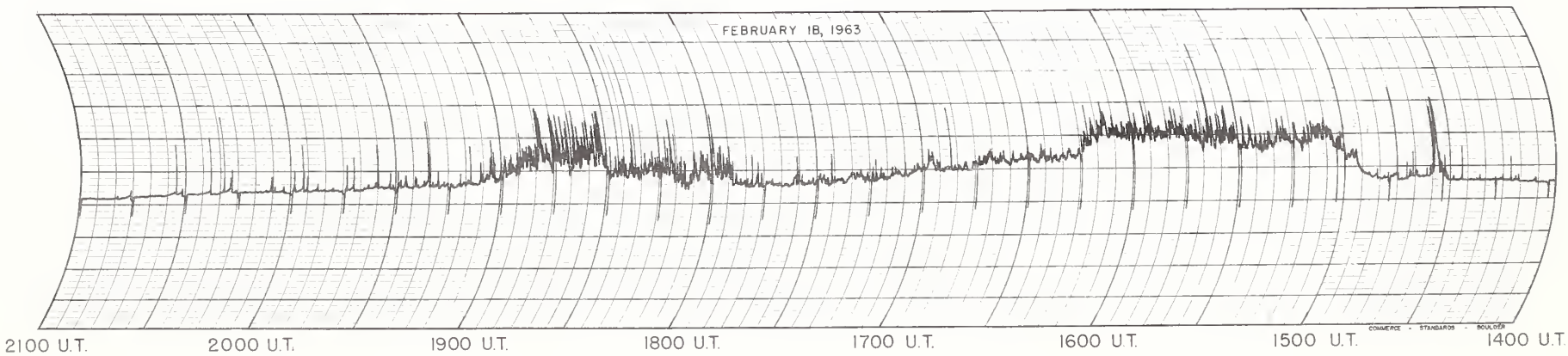
SOLAR NOISE BURSTS

FEBRUARY 6, 18, 1963

ARO - OTTAWA 2800 Mc.



BOULDER 108 Mc.



SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS
MARCH 1963

BOEING - SEATTLE 221 Mc.

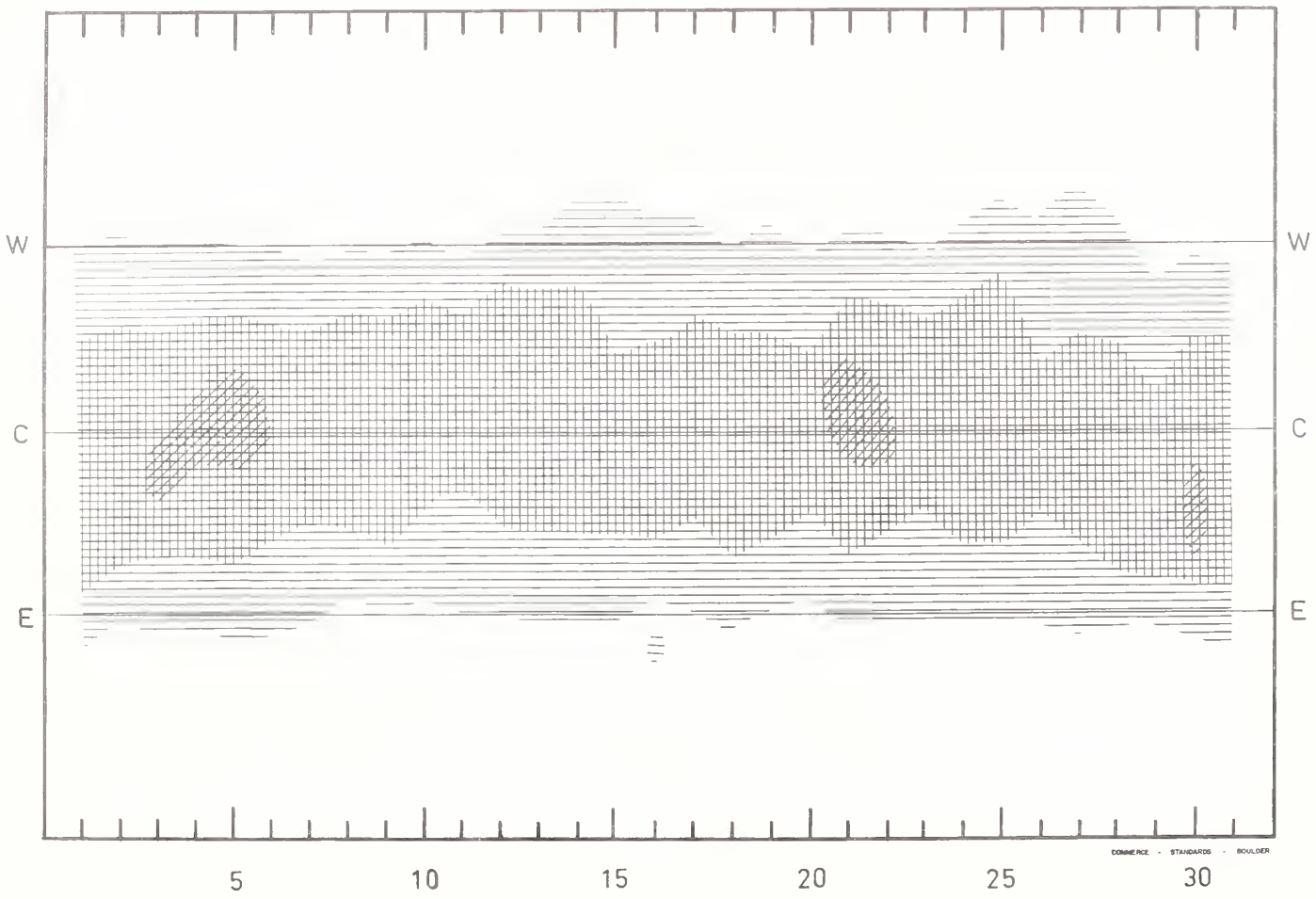
March 1963	Type	Starting time	Time of max.	Duration	Flux density 10^{-22} wm^{-2}(c/s)$^{-1}$	
		UT	UT	minutes	peak	mean
3	ec	1620.3	1620.5	0.4	30	

COMMERCE - STANDARDS - BOULDER

Normal observing period: 1700-2300 UT

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS

NANÇAY — MARCH 1963 — 169 Mc.



MARCH 1963

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
FEBRUARY — MARCH 1963

BOULDER 108 Mc.

Feb-Mar.	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
Feb.					
*18	3	1429	1432.0	4.5	2
18	6	1449	-	231	2
March					
20	3	2150.5	2151.9	2.5	2

COMMERCE - STANDARDS - BOULDER

*Note: February 18, 1963 data are addenda to Table IVd in CRPL-F 223B.

NOMINAL TIMES OF OBSERVATION
OUTSTANDING OCCURRENCES
MARCH 1963

BOULDER 108 Mc.

March 1963	U.T.			March 1963	U.T.
1	1339-0037	I	1442-1449	19	1311-2045
2	1337-0038	I	2339-0038		2050-0056
3	1336-1449	I	2351-2354	20	1309-0057
	1453-0039			21	1307-0058
4	1334-0040			22	1306-0059
5	1333-0041	I	2348-2351	23	1304-0100
6	1331-0042	I	2333-0042	24	1303-0101
7	1330-0043	I	0032-0043	25	1301-0102
8	1328-0044			26	1259-0103
9	1327-0045			27	1258-0104
10	1721-0046			28	1256-1635
11	1324-0047				1841-2212
12	1322-0049			29	1545-2030
13	1320-0050				2330-0106
14	1319-0051				
15	1317-0052			30	1253-2236
16	1316-0053				2306-0107
17	1314-1725			31	1251-0108
	1955-0054				
18	1312-0055				

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION
SPECTRUM OBSERVATIONS

MARCH 1963

HAO BOULDER

7.6 - 41 Mc.

Date 1963	Bursts			Frequency Range (mc)	Date 1963	Bursts			Frequency Range (mc)
	Type	Time (U.T.)	Inten-sity			Type	Time (U.T.)	Inten-sity	
3 Mar	II	d 2355.45-2403.30	1+	27-41	16 Mar	No Observ.	b2142		
4	III	1406.15-1406.45	1-	32-41	17	No Observ.	b1621		
	III	2304.30-2305	1-	32-41		No Observ.	a2414		
	III	2305.30-2306.45	1	22-41	18	No Observ.			
	III	2307.15-2307.45	1	22-41	19	No Observ.	b2247		
	III	2335.45-2336.15	1	20-41		No Observ.	a2412		
6	No Observ.	b2053			20	No Observ.	b2324		
12	No Observ.					III	2423-2423.30	1	22-41
13	No Observ.	b1444			27	III	1712.45-1713	1-	23-41
	III	1823.30-1823.45	1-	21-38		III	1713.15-1714	1-	23-41
	III	2115.15-2116	1	20-41	30	III	1637.30-1638	1-	23-41
	III	2207-2208.30	1+	21-41	31	III	1905.45-1906.15	1-	22-37
	III	2210-2210.30	1-	24-36		III	2054.30-2055	1	17-41
	III	2219.15-2219.45	1-	22-35		III	2055.45-2056.15	1-	18-41
	III	2220.45-2223	1	21-41		III	2225.30-2226.30	1-	21-41
14	III	1956-1956.30	1-	18-41		III	2227.45-2228.45	1	12-41

d=harmonic structure

COMMERCE - STANDARDS - BOULDER

SOLAR RADIO EMISSION SPECTROHELIOGRAMS

MARCH 1963

STANFORD

9.1 cm

THE LIMITED AMOUNT OF AVAILABLE DATA FOR MARCH, 1963, WILL BE PUBLISHED LATER.

COSMIC RAY INDICES

(Climax Neutron Monitor)

IGC Station B 305

FEBRUARY 1963

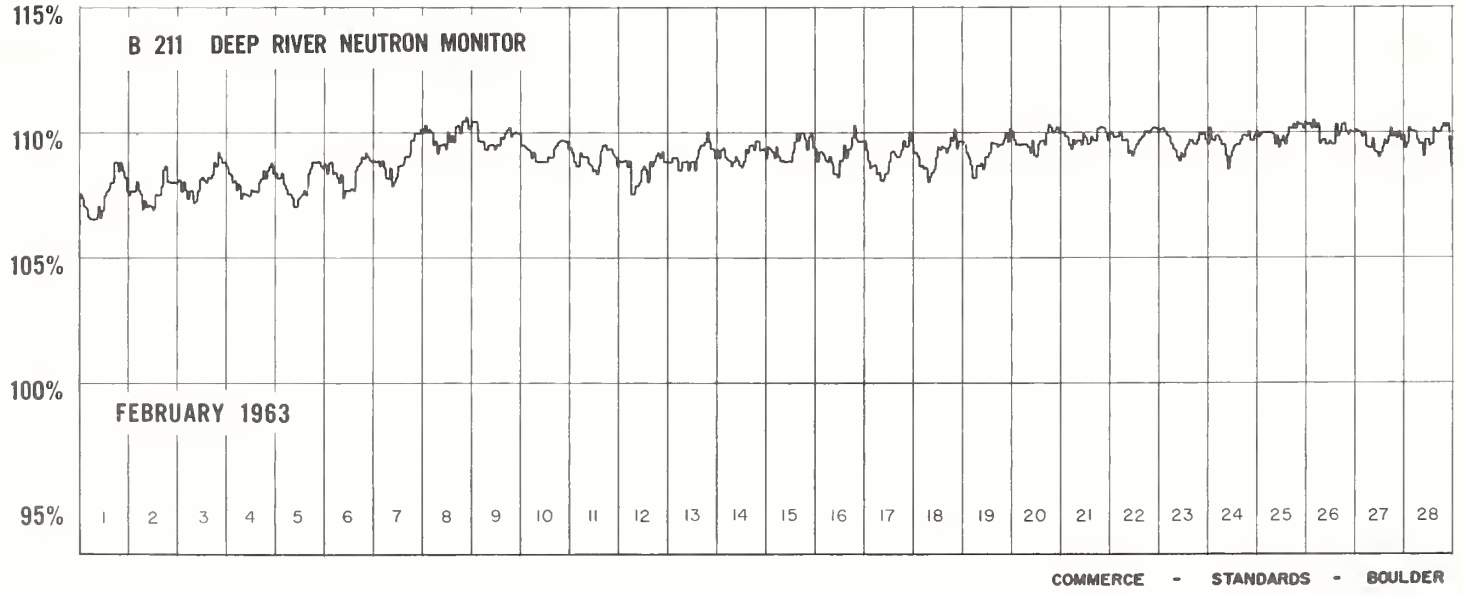
Feb. 1963	Daily average counts/hr*	Feb. 1963	Daily average counts/hr*
1	3145.0	16	3176.4
2	3150.9	17	3183.0
3	3146.9	18	3187.1 +38
4	3155.0	19	3177.0
5	3169.0	20	3180.1
6	3176.5	21	3181.3
7	3181.5	22	3188.1
8	3200.4	23	3185.8
9	3205.7	24	3188.7
10	3233.0	25	3194.2
11	3213.6	26	3191.2
12	3190.9 +34	27	3193.1
13	3184.2	28	3193.1
14	3176.2		
15	3182.1		

COMMERCE - STANDARDS - BOULDER

*Scaling Factor 128
+Number of Section Hours

COSMIC RAY INDICES

(Pressure Corrected Hourly Totals)

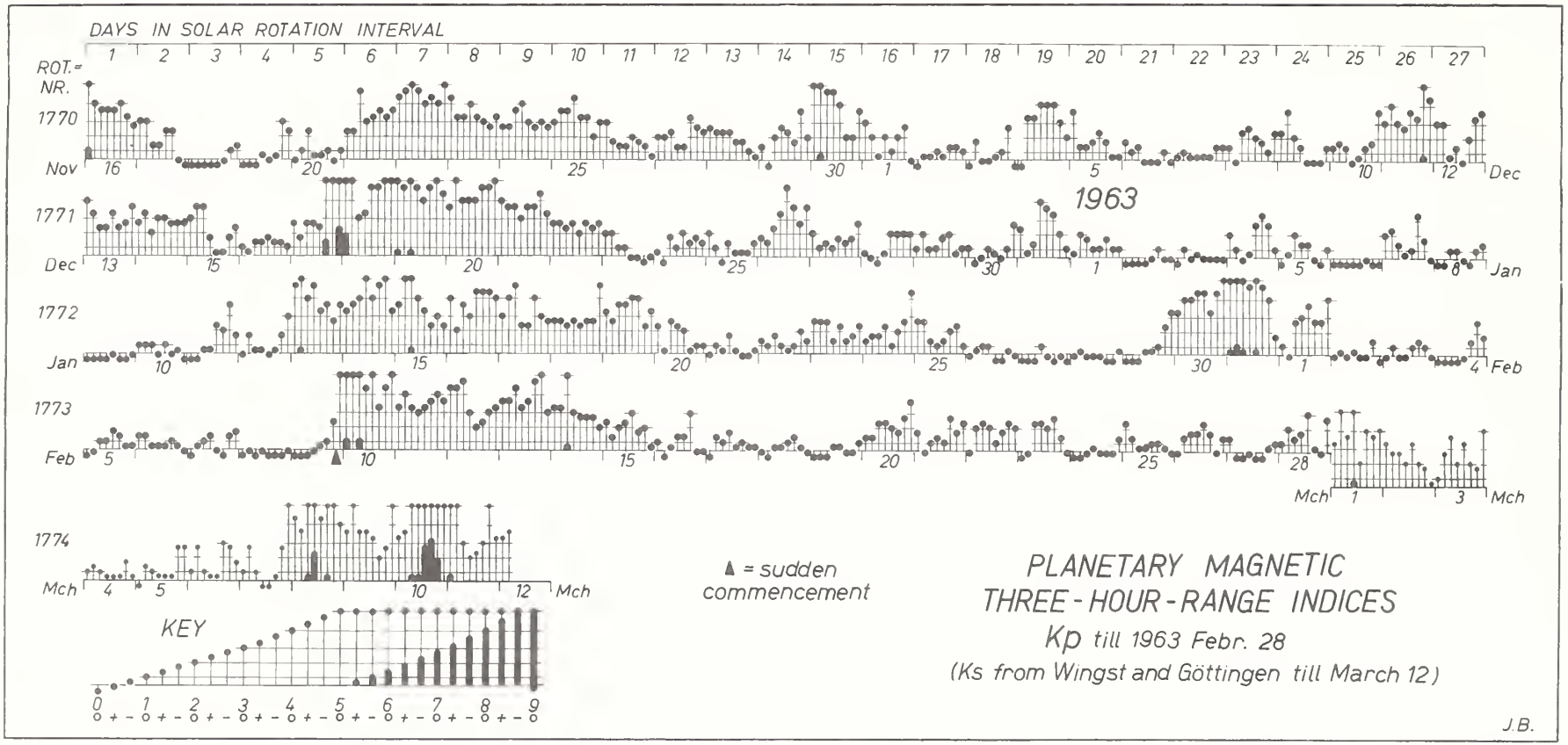


GEOMAGNETIC ACTIVITY INDICES

FEBRUARY 1963

1963 Feb.	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.8	1o 0+ 3- 3o	4- 3- 3- 4o	20o	13	Five
2	0.1	0+ 1- 0+ 1-	0+ 0+ 1+ 0o	4o	2	Quiet
3	0.2	0+ 1o 0+ 0+	1o 1+ 1o 0+	6-	3	2
4	0.3	0o 0o 0o 0o	0+ 1+ 3- 2-	6o	3	8
5	0.1	0o 0+ 1o 1o	2- 1+ 1- 1-	7-	3	19
6	0.0	1+ 1+ 1- 1-	1- 1o 1- 0+	7-	4	24
7	0.1	0o 1- 1o 1+	0+ 0o 1+ 2-	6+	3	27
8	0.0	0o 0+ 0o 0+	0o 0o 0o 0+	1o	1	
9	0.9	0o 0o 0o 0+	1- 1o 2+ 5o	9+	8	
10	1.6	6- 5o 6- 4+	5o 3+ 4+ 5o	38+	45	
11	1.1	3+ 4o 3+ 3o	3+ 4- 4o 4-	28+	21	Five
12	1.1	4+ 4+ 5- 3o	2o 2+ 3o 3+	27o	21	Disturbed
13	1.4	4- 4- 4+ 3+	4- 5- 5o 3o	31+	27	10
14	1.0	3+ 3+ 5+ 3o	3- 3- 3- 2o	25o	19	11
15	0.4	2+ 1+ 2o 2+	3o 2- 2o 1-	15+	8	12
16	0.3	1o 0o 1- 1+	1+ 3o 0+ 0+	8o	4	13
17	0.1	0o 1+ 1o 2-	1- 1o 1- 1-	7o	4	14
18	0.2	0+ 0o 1- 1-	1o 1+ 1- 0+	5o	3	
19	0.0	0o 0o 0o 1-	1- 0+ 0+ 1o	3o	2	
20	0.7	1+ 1+ 2+ 2+	2o 2- 3- 4-	17+	9	
21	0.4	2- 0+ 1o 1+	1o 3- 2- 2+	12o	6	Ten
22	0.5	0+ 2o 2+ 2o	1o 2- 2+ 2o	14-	6	Quiet
23	0.3	0o 0+ 2+ 2+	2o 3- 1+ 0+	11+	6	2
24	0.0	0o 0o 0+ 1-	0+ 0+ 0+ 1+	3+	2	3
25	0.2	2+ 1+ 1- 1-	1o 1o 1- 0+	8o	4	5 6
26	0.3	0+ 1+ 2- 2-	2+ 2- 0+ 1+	11-	5	7
27	0.0	1+ 0o 0o 0+	0o 0o 1- 1o	3+	2	8
28	0.3	1o 2o 1+ 2-	3o 1- 0+ 3-	13-	7	18
29						19
30						24
31						27
Mean:	0.44			Mean:	9	

COMMERCE - STANDARDS - BOULDER



PLANETARY MAGNETIC THREE-HOUR-RANGE INDICES

Kp till 1963 Febr. 28

(Ks from Wingst and Göttingen till March 12)

J.B.

COMMERCE - STANDARDS - BOULDER

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

FEBRUARY 1963

NORTH ATLANTIC

FEBRUARY 1963	NORTH ATLANTIC 6-HOURLY QUALITY FIGURES: 00 TO 06	06 TO 12	12 TO 18	18 TO 24	SHORT-TERM FORECASTS ISSUED ABOUT ONE HOUR IN ADVANCE OF: 00	06	12	18	WHOLE DAY INDEX	ADVANCE FORECASTS (J_S REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY: 1-7 DAYS FINAL	1-7 DAYS	1-3 DAYS SDW	1-7 DAYS J	GEOMAGNETIC K_{FR}: HALF DAY (1)	(2)
01	3-	2+	4+	4+	2	2	5	4	(3+)	4	4			2	3
02	3+	4_0	5+	5-	3	3	6	5	(4+)	5	5			0	0
03	4+	4_0	6-	5-	4	4	6	5	(4+)	5	5			1	1
04	4+	3+	6+	5+	5	4	6	6	(4+)	5	5			0	1
05	5_0	4_0	6^0	5+	5	4	6	6	5-	5	5			1	1
06	5+	4+	6+	6-	5	4	6	6	5_0	5	5			2	0
07	5+	4+	6^0	6-	5	4	6	6	5_0	6	6			1	1
08	5+	4+	6+	6_0	5	4	6	5	5+	4	4			0	0
09	5_0	5+	7-	6-	5	4	6	6	6-	4	4			0	3
10	3_0	4-	4^0	5-	4	3	5	3	(4-)	4	4			(5)	(4)
11	3+	3+	6-	5-	3	3	4	5	(40)	4	4			(4)	3
12	3_0	2+	5+	5-	4	3	5	5	(3+)	4	4			(4)	3
13	3_0	3-	6^0	4_0	3	3	5	5	(4-)	5	5			(4)	(4)
14	3_0	3+	6_0	4+	3	3	6	5	(40)	4	4			3	2
15	4_0	3_0	6-	5+	3	4	6	5	(4+)	4	4			2	2
16	4_0	3+	6-	6-	4	3	6	5	(4+)	5	5			1	1
17	5_0	4_0	5+	6-	4	4	6	6	5-	5	5			1	2
18	5-	4-	6+	6-	5	4	6	6	5-	5	5			1	1
19	5+	4+	6+	6+	5	4	7	6	5+	6	6			0	1
20	6-	5+	6+	6_0	6	5	7	6	6-	6	6			2	3
21	5+	5_0	6+	6-	6	5	7	6	6-	6	6			2	2
22	5-	5_0	6_0	5+	5	5	6	6	5+	6	6			2	2
23	5_0	5-	6+	6-	5	5	6	6	6-	6	6			1	2
24	6-	5-	6_0	6-	6	5	6	6	6-	6	6			1	1
25	6-	5+	7-	6+	5	5	6	6	6_0	6	6			1	1
26	6-	5+	6+	6_0	5	5	6	6	6-	5	5			2	2
27	5+	5-	6+	6_0	6	5	6	6	6-	5	5			0	1
28	6-	5-	7-	6_0	5	5	6	6	6-	6	6			2	2

Score: Quiet Periods	P	11	9	16	19		10	10								
	S	6	1	9	5		6	6								
	U	0	0	0	1		0	0								
	F	0	0	1	0		1	1								
Disturbed Periods	P	6	13	0	1		4	4								
	S	5	5	2	2		7	7								
	U	0	0	0	0		0	0								
	F	0	0	0	0		0	0								

NORTH PACIFIC

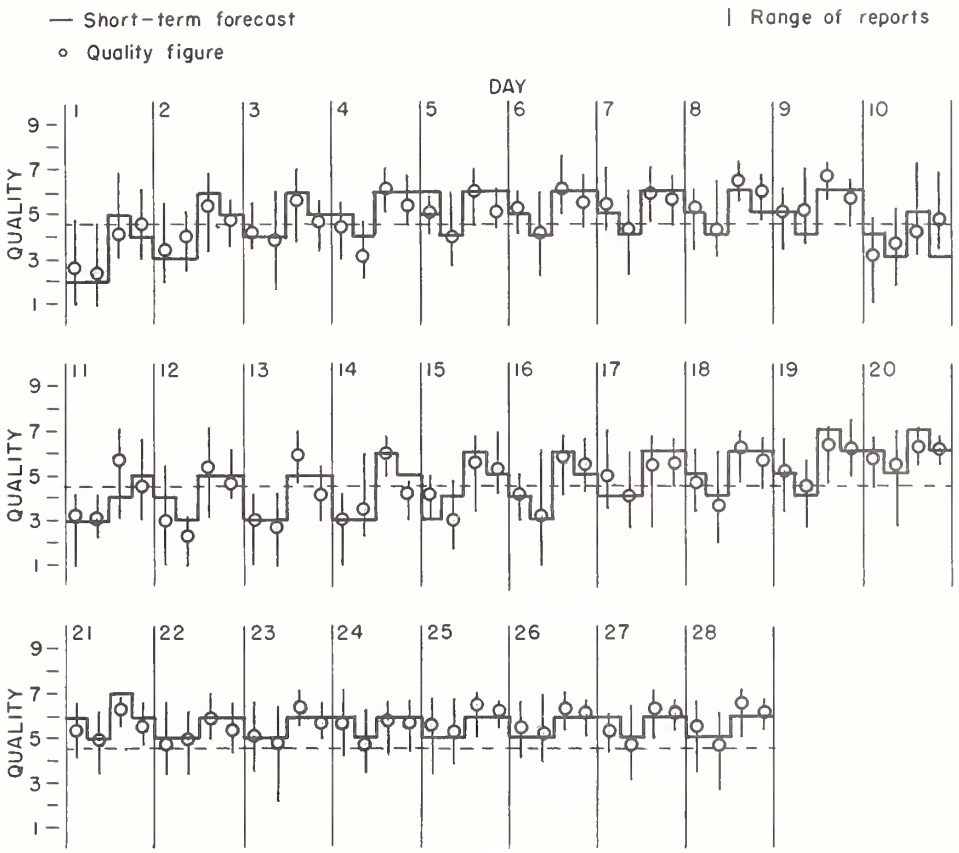
NORTH PACIFIC 12-HOURLY QUALITY FIGURES: 0700 TO 1900	1900 TO 0700	SHORT-TERM FORECASTS ISSUED AT: 0600	1800	WHOLE DAY INDEX	ADVANCE FORECASTS (J_P REPORTS) FOR WHOLE DAY, ISSUED IN ADVANCE BY: 1-7 DAYS FINAL	1-7 DAYS	1-3 DAYS SDW	1-7 DAYS J_P	GEOMAGNETIC K_{SI}: HALF DAY (1)	(2)
3	4	4	4	(4)	4	4			2	3
4	4	4	4	(4)	5	5			0	0
3	4	4	4	(4)	5	5			0	1
4	4	4	5	(4)	5	5			0	1
4	5	4	4	(4)	6	6			1	1
4	6	4	5	5	6	6			1	1
4	6	5	6	5	5	5			1	0
5	6	5	6	5	5	5			0	0
5	6	5	6	5	5	5			0	1
4	5	4	4	5	4	4			(5)	(4)
4	6	4	5	5	4	4			3	3
5	6	4	6	6	4	4			(4)	3
5	6	4	4	5	5	5			(4)	(4)
5	6	4	6	6	4	4			(4)	2
5	6	4	6	5	4	4			2	2
5	7	5	7	6	5	5			1	1
6	7	5	7	7	6	6			1	0
5	7	6	6	6	6	6			0	0
6	7	5	7	6	6	6			0	0
6	5	5	6	6	6	6			1	2
5	6	5	6	5	6	6			1	1
6	7	6	7	7	6	6			1	1
6	7	6	7	7	6	6			1	1
5	7	6	6	6	6	6			0	0
5	7	6	7	6	6	6			0	0
5	8	5	6	6	4	4			2	2
6	8	5	6	7	4	4			0	0
6	8	6	7	7	6	6			1	1

Score: Quiet Periods	P											8	13		9	
	S											11	8		10	
	U											0	2		0	
	F											0	1		4	
Disturbed Periods	P											6	3		1	
	S											3	1		3	
	U											0	0		0	
	F											0	0		1	

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

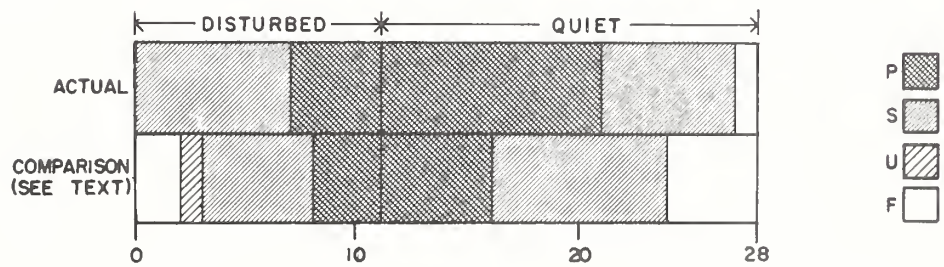
NORTH ATLANTIC

FEBRUARY 1963

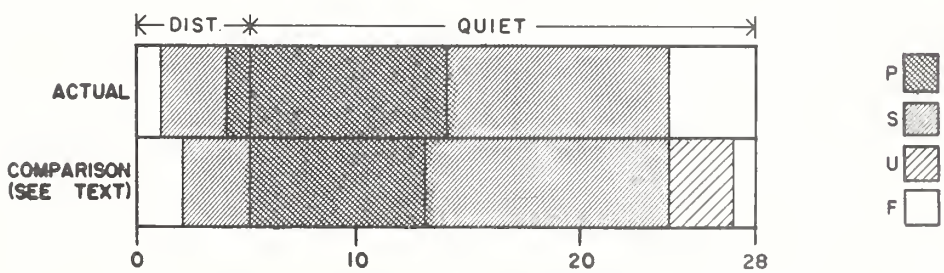

— Short-term forecast
o Quality figure
| Range of reports
DAY
QUALITY
1 2 3 4 5 6 7 8 9 10
11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28
9 7 5 3 1

Outcome of advance forecasts--final estimates (1 to 7 days ahead)

NORTH ATLANTIC

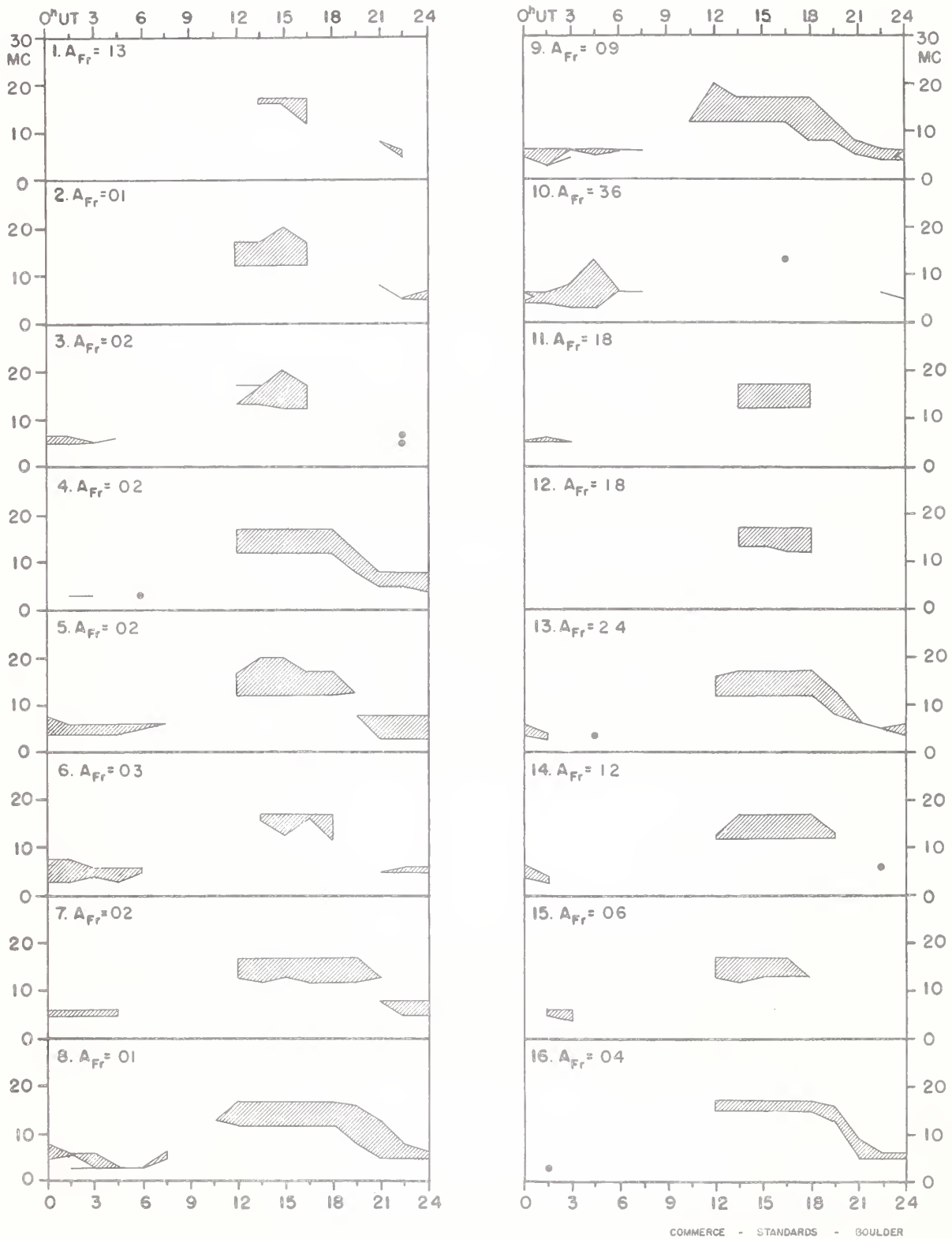


NORTH PACIFIC



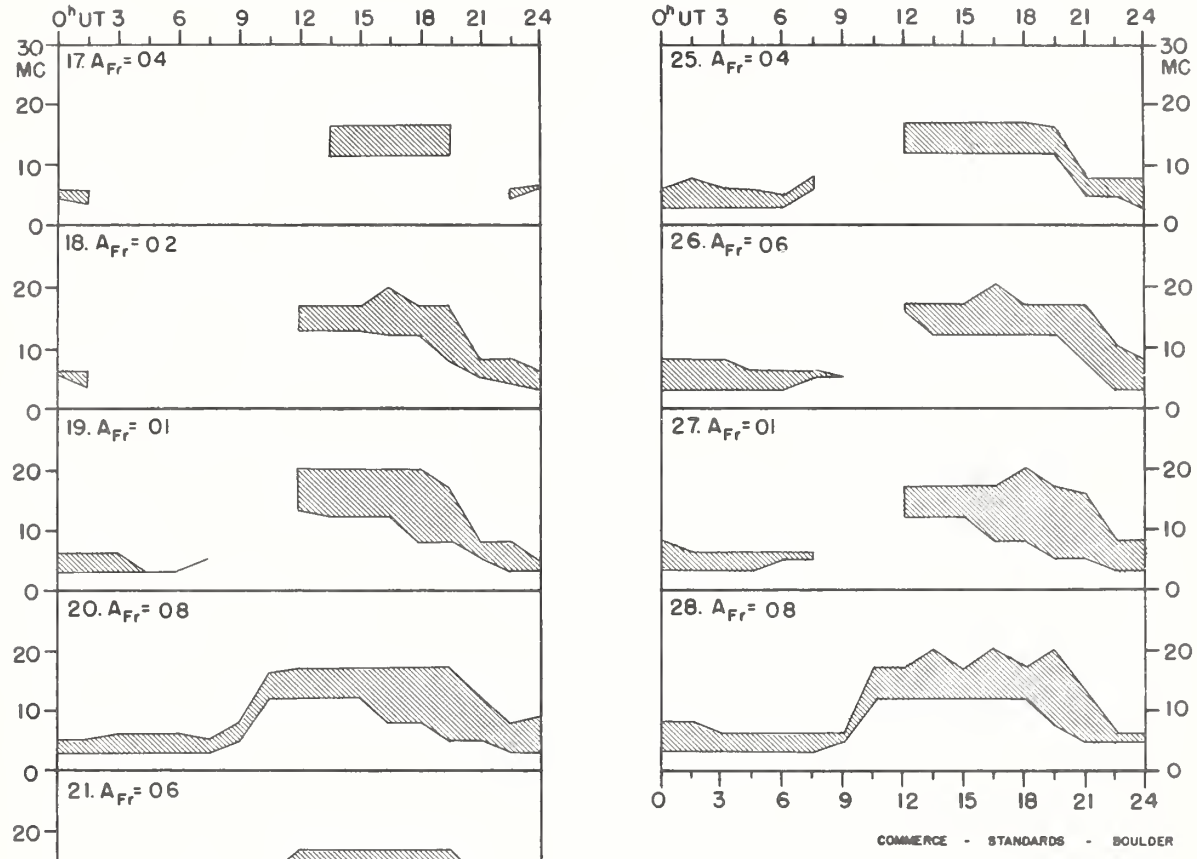
USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

FEBRUARY 1963



COMMERCE - STANDARDS - BOULDER

FEBRUARY 1963



Adapted from Observations by Deutsches Bundespost

ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE

MARCH 1963

Issued March 1963 Day/Time U.T.	Advance Geophysical Alert	No.	World-Wide Geophysical Alert	Special World Intervals
08/1600		197	Magnetic Storm 07/21XXZ	

COMMERCE - STANDARDS - BOULDER

USCOMM-NBS-DC